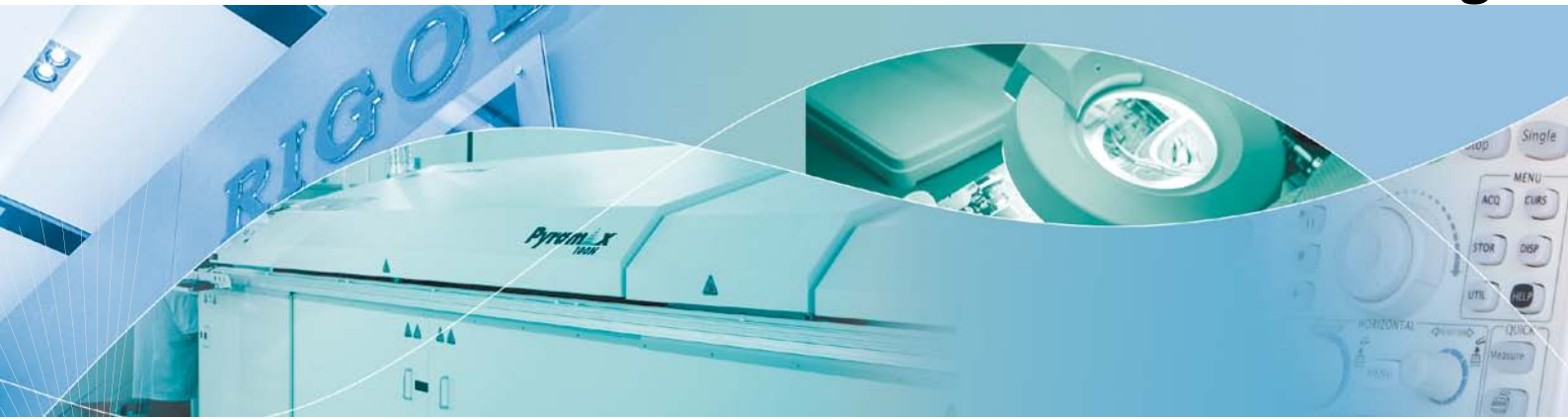




# 2009

## Test and Measurement Product Catalog



## Company Profile

RIGOL TECHNOLOGIES, INC. is an emerging leader in the test and measurement field.

RIGOL is a fellow member of China Electronic Instrument Industry Association and the Informational Member of LXI Consortium. Our current product line consists of Digital Oscilloscopes, RF Spectrum Analyzers, Digital Multimeters, Function/Arbitrary Waveform Generators, Digital Programmable Power Supplies, Virtual Instruments and Chemical Analysis Systems, and much more.

RIGOL currently has 300 employees and is continuing to grow. We invest heavily in R&D and today have over 100 R&D engineers working on future products. RIGOL has 10 sales offices in China along with a branch office in North America. Currently, we offer our products and services in over 60 countries or regions on six continents utilizing more than 150 distributors and representatives.

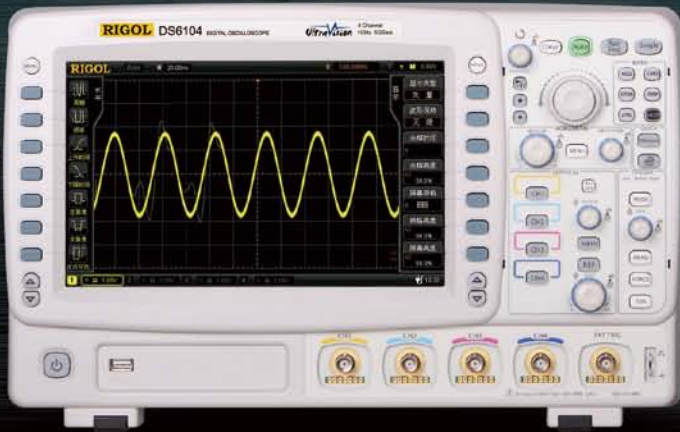
RIGOL Technologies, Inc. is an ISO9001:2000 Quality Management System and ISO14001:2004 Environmental Management System Certified company.

Our goal is to be the partner of choice in test and measurement solutions and services.

## RIGOL Milestones

- Jul., 1998 RIGOL was founded in Beijing.
- May., 1999 RIGOL's first product RVO 2100, a high performance Virtual Digital Storage Oscilloscope was introduced.
- Mar., 2002 RIGOL DS3000 series DSO, the first high performance Bench-Top DSO was introduced.
- Feb., 2004 RIGOL DS5000 series DSO, the first, 1 GSa/s real-time sample rate, 200 MHz bandwidth DSO from any Chinese manufacturer was introduced.
- Apr., 2006 RIGOL DS1000 series oscilloscope was introduced as the best Performance/Price Mixed Signal Oscilloscope (MSO) in the world.
- Apr., 2006 RIGOL received ISO9001:2000 Certification.
- Jul., 2006 RIGOL DG3000/DG2000 series Function/Arbitrary Waveform Generator was introduced. The first Mixed Signal Generator (MSG) in the world having 1 analog channel and an option for 16 digital channels.
- Jul., 2006 RIGOL 6 ½ Digital Multimeter DM3000 series was introduced.
- Oct., 2006 The Prestigious EDN China Annual Innovation Award for DS1000 series DSO was awarded to RIGOL along with Local Innovation Company Award, the first time it was ever awarded to a Chinese company.
- Apr., 2007 RIGOL was invited to form the committee writing China National Standard GB/T 15289-07 of 'General Specification and Test Method for Digital Storage Oscilloscopes'.
- Apr., 2007 RIGOL received the ISO14001:2004 Environmental Protection & Management System Certification.
- May., 2007 RIGOL DS1000A was introduced. This is the first DSO in China featuring 2 GSa/s real-time sample rate with bandwidth up to 300 MHz.
- May., 2007 RIGOL DG 1000 series Function/Arbitrary Waveform Generator with build-in counter was introduced.
- Oct., 2007 RIGOL strengthens its research and development; opening R&D center in Shanghai.
- Nov., 2007 As 2006 Annual Innovation Award winner, RIGOL once again has earned EDN China Innovation Award.
- Dec., 2007 RIGOL awarded the CMIF and Beijing Municipal Science & Technology Commission Advanced Achievement Award.
- Apr., 2008 RIGOL DS1000B series Digital Oscilloscope was introduced. First DSO in China with 4-channel and complete LXI standard compliance.
- Nov., 2008 RIGOL was certified as Municipal Technology Center of Beijing.
- Dec., 2008 RIGOL shipped 40,000 units DSO's worldwide, leading in the category.
- Jan., 2009 RIGOL DS1000E series DSO was awarded "Product of the Year" by "Electronic Products" Magazine in United States.
- Jan., 2009 RIGOL became the very first official LXI-C class Test House in Asia.
- May, 2009 High Performance Programmable DC Power Supply DP1308A was introduced.
- Aug., 2009 RF Spectrum Analyzer featuring digital IF technology, DSA1000A series was introduced.
- Nov., 2009 High Performance DS6000 series was introduced, the first DSO in China featuring 1GHz Bandwidth, 5 GSa/s real time sample rate, 140Mpts Memory Depth and 120K waveforms/s waveform updating rate.





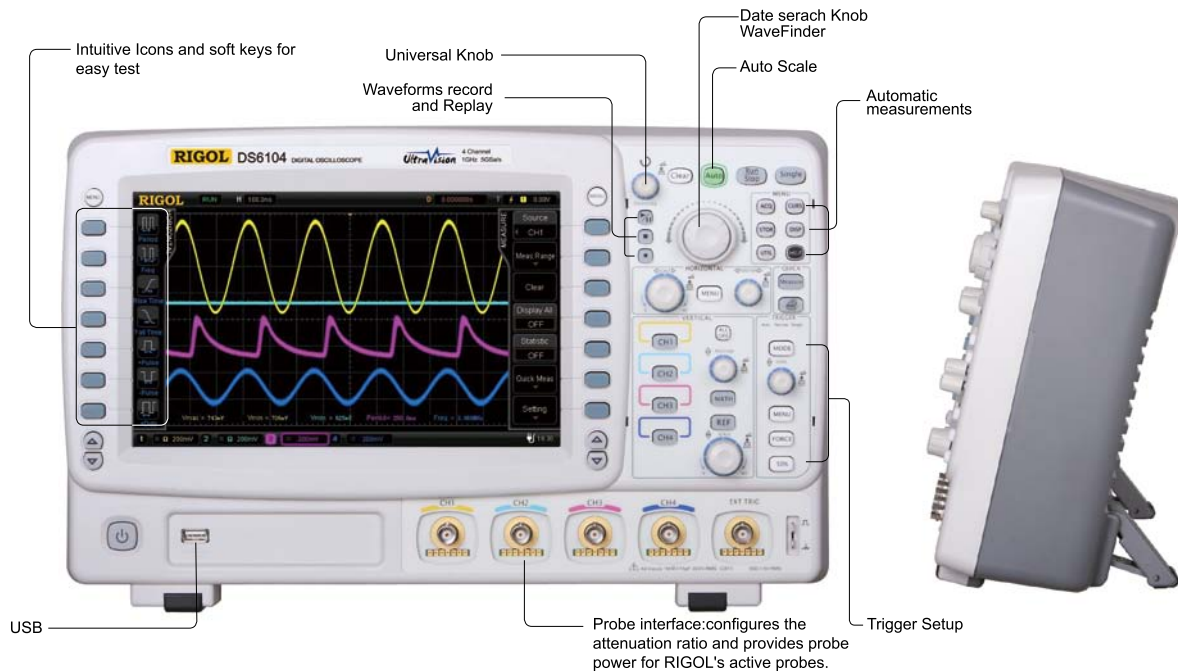
**Flexible Solutions, Solid Performance**

RIGOL's products- Digital Oscilloscopes, Function/Waveform Generators, Digital Multimeters, Virtual Instruments and other test tools- offer more features and/or better performance with affordable price. RIGOL R&D team is dedicated to delivering higher performance, higher accuracy, higher sensitivity, higher stability, higher liability and more environmental sustainability





# DS6000 Series Digital Oscilloscope



Product Dimensions: Width×Height×Depth = 399mm×255.3mm×123.8mm Weight:4.05 kg (without batterie)

## ► Key features of DS6000 series

### 1. Industry-leading specifications

- Up to 1GHz BW with 5GSa/s sample rate
- Standard 140Mpts deep memory
- Up to 120,000 waveforms per second acquisition rate
- Up to 180,000 frames for waveform record and replay

### 2. Innovative UltraVision technology

- Deeper memory, higher waveform acquisition rate
- Up to 256 levels intensity grading
- Real time waveform record and replay
- Customized real time hardware filters(LPF,HPF,BPF,BRF)

### 3. Broad applications

- A variety of Trigger functions and Automatic measurements with statistics
- Serial bus trigger and decode such as I2C, SPI, RS232, CAN...
- Advanced math function
- Complete Connectivity
- A variety of Probes and accessories

### 4. Attractive profile

- Large display: 10.1 inch WVGA (800x480), LED backlight
- Shallow depth: reduces the space occupied
- Light weight: easy for hand carry even with battery power option

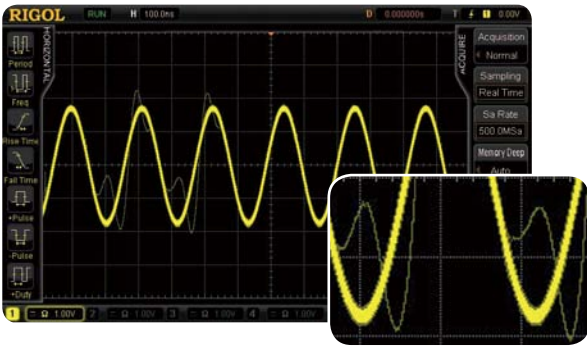
Model	DS6104	DS6102	DS6064	DS6062
Bandwidth	1 GHz	1 GHz	600 MHz	600 MHz
Max. Sample rate	5 GSa/s	5 GSa/s	5 GSa/s	5 GSa/s
Memory(Standard)	140 Mpts	140 Mpts	140 Mpts	140 Mpts
Channels	4	2	4	2
Acquisition rate	Up to 120,000 waveforms per second			
Frames recorded	Up to 180,000 frames			

## ► Recommended RIGOL probes

Model	Descriptions
RP5600	600MHz Passive probe
RP7150	1.5GHz differential/single ended active probe(Optional)

## ► Features and Benefits

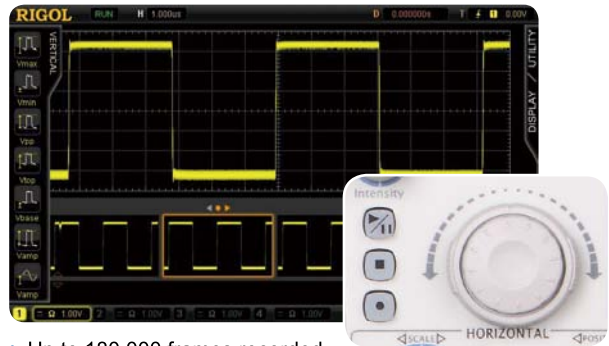
### RIGOL's innovative UltraVision technology



- Deeper memory, higher waveform acquisition rate
- Up to 256 levels intensity grading
- Real time waveform record and replay
- Customized real time hardware filters(LPF,HPF,BPF,BRF)



### UltraVision---Real time waveform record and replay



- Up to 180,000 frames recorded
- "WaveFinder"--Dedicated data search knob
- Replay and analyze the recorded waveforms

### A variety of Trigger functions

- Edge
- FlexRay
- SPI
- Sequence
- Pulse width
- RS232/UART
- CAN
- Duration
- Pattern
- Slew rate
- USB
- I<sup>2</sup>C
- Glitch
- Video

### Serial bus decoding functions

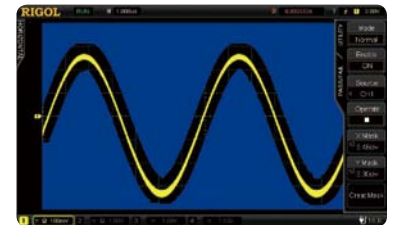


- I<sup>2</sup>C Decoding
- RS232 Decoding
- SPI Decoding
- USB Decoding
- CAN Decoding
- FlexRay Decoding...

### Advanced math function (user defined)



### Mask test functions



## ► Probes

### RP5600 10:1 divider passive probe



- 600MHz Bandwidth
- 10:1 passive probe
- Shipped with probe positioner and its accessories
- Identified by DS6000 automatically

### RP7150 1.5GHz BW active probe (optional)



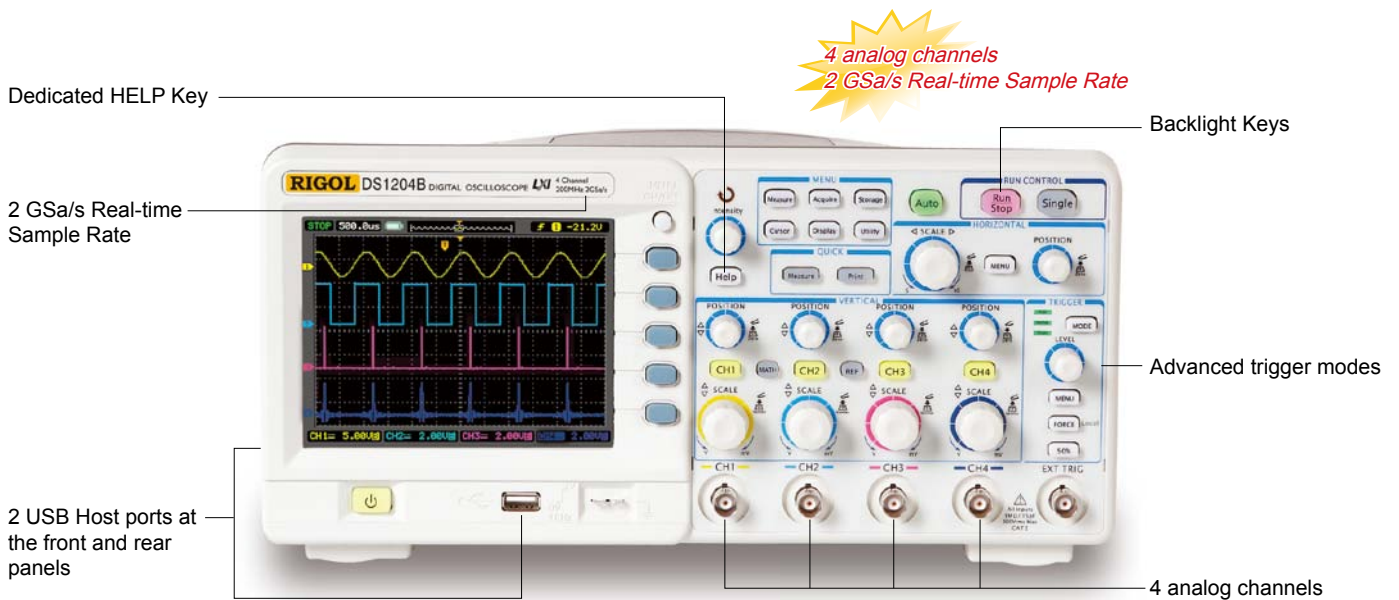
- 1.5GHz Bandwidth
- Active probe support both differential and single-ended measurements
- Shipped with the browser probe head
- Provides many kinds of probe connection accessories
- Identified by DS6000 automatically

### Complete Connectivity



- Aux
- 10MHz In/Out
- WVGA
- LAN
- USB
- USB-GPIB

# DS1000B Series LXI Class C Compliant Digital Oscilloscope



Product Dimensions: Width×Height×Depth=325mm×159mm×133mm Weight:3 kg

## ► Application Areas

- Design and Debug
- Manufacturing
- Quality Control
- Service and Repair
- Education and Research

## ► Features and Benefits

1. 4 analog channels
2. 2 GSa/s Real-time Sample Rate and 50 GSa/s Equivalent-time Sample Rate
3. Compact design with small footprint to save bench space
4. 5.7" TFT QVGA (320×240) with 64K color LED backlight display with power save mode
5. Advanced trigger modes including Edge, Video, Pulse Width, Alternate and Pattern trigger across 4 analog channels
6. Built-in USB Host and USB Device to support USB flash drive, PictBridge printers and direct system upgrades
7. LXI Class C certified LAN Ethernet connectivity standard

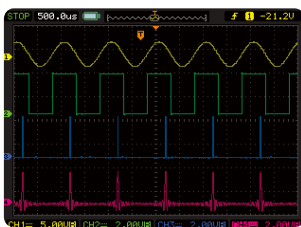
Model	DS1204B	DS1104B	DS1064B
Bandwidth	200 MHz	100 MHz	60 MHz

## ► Specifications

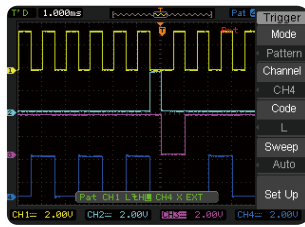
Model	DS1204B	DS1104B	DS1064B
Bandwidth	200 MHz	100 MHz	60 MHz
Memory Depth	16 kpts (half channel), 8 kpts (each channel)		
Channels	4 channels + external trigger		
Real-time Sample Rate	2 GSa/s (half channel), 1 GSa/s (each channel)		
Equivalent-time Sample Rate	50 GSa/s	25 GSa/s	10 GSa/s
Rise Time	1.8 ns	3.5 ns	5.8 ns
Input Impedance	1 MΩ    18 pF		
Timebase Range	1 ns/div ~ 50 s/div	2 ns/div ~ 50 s/div	5 ns/div ~ 50 s/div
Trigger modes	Edge, Video, Pulse Width, Alternate, pattern trigger across 4 analog channels		
Vertical Sensitivity	2 mV/div ~ 10 V/div		

Vertical Resolution	8 bits
Maximum Input Voltage	All Inputs 1MΩ  18pF 300Vrms Max CAT I
Cursor Measurement	Manual, Track and Auto Measure modes
Math	+, -, ×, FFT
Internal Storage	10 waveforms, 10 setups
USB Storage	8 bits BMP, 24 bits BMP, PNG, CSV, Waveforms and Setups against USB flash drive's limit
Connectivity	USB Device, dual USB Host, LXI-C compliant LAN
Display	5.7" TFT QVGA (320×240) with 64K color LED backlight display
Power Supply	AC: 100-127 V, 45Hz - 440Hz; 100 - 240V, 45Hz - 65Hz. 60VA Max

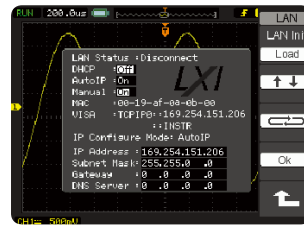
## ► Advanced Performance



4 analog signal input channels makes multi-channel signals test easy



**Pattern Trigger**  
Triggers on any combination of events across all 4 analog channels



LXI Class C compliant

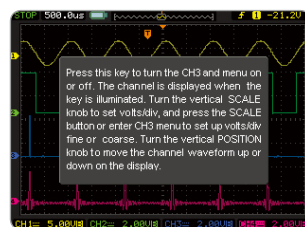


PictBridge Certified

## ► Intuitive User Interface and Front Panel Design



**Independent Channel Control**  
4 analog channels with independent vertical control



**Built-in Help System**  
Dedicated Help button to access Built-in help system



**Auto Measure Button**  
To turn on selected general measurements directly

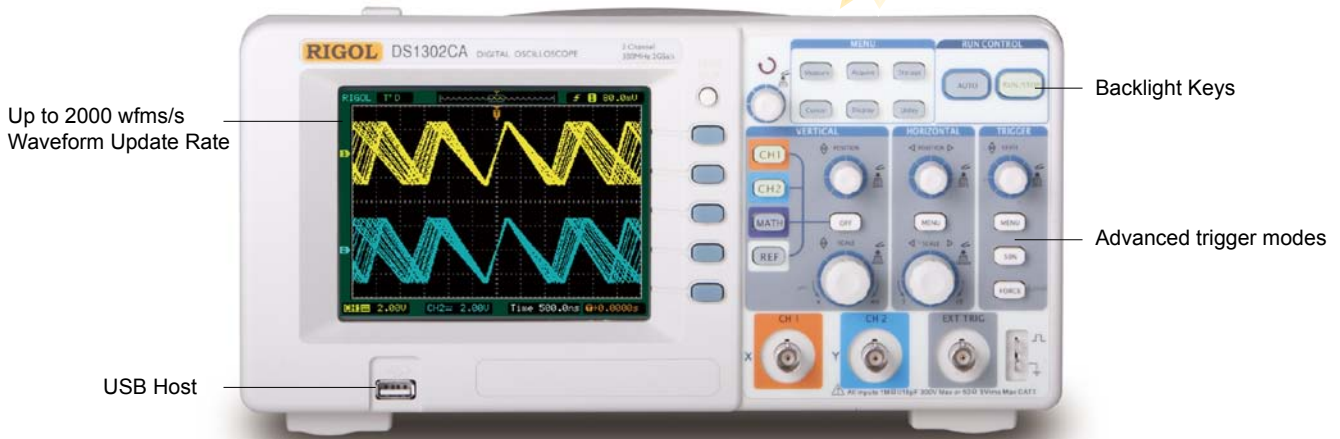
**Direct Print Button**  
To directly print the screen or save the waveforms locally or to the USB flash drive via USB Host port



**Easy Select Trigger Mode**  
To easily switch the trigger modes

# DS1000CA Series Digital Oscilloscope

*Up to 300MHz Bandwidth  
Up to 2000 wfms/s Waveform Update Rate*



Product Dimensions: Width×Height×Depth = 303mm×154mm×133mm Weight: 2.3 kg

## ► Application Areas

- Design and Debug
- Manufacturing
- Education and Training
- Service and Repair

## ► Features and Benefits

1. Up to 300MHz Bandwidth
2. 2 GSa/s Real-time Sample Rate and 50 GSa/s Equivalent-time Sample Rate
3. Compact design with small footprint to save bench space
4. 5.7" 64K color TFT LCD Display
5. Up to 2000 wfms/s Waveform Update Rate
6. Advanced trigger modes including Edge, Video, Pulse Width, Slope and Alternate
7. Built-in USB Host and USB Device to support USB flash drive and direct system upgrades

Model	DS1302CA	DS1202CA	DS1102CA	DS1062CA
Bandwidth	300 MHz	200 MHz	100 MHz	60 MHz

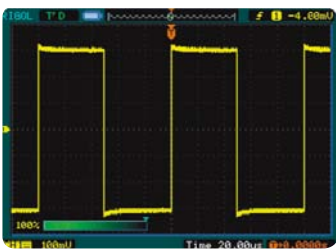
## ► Specifications

Model	DS1302CA	DS1202CA	DS1102CA	DS1062CA
Bandwidth	300 MHz	200 MHz	100 MHz	60 MHz
Memory Depth	10 kpts (5 kpts on 2 channels)			
Channels	2 channels + external trigger			
Real-time Sample Rate	2 GSa/s (1 GSa/s on 2 channels)			
Equivalent-time Sample Rate	50 GSa/s	25 GSa/s		10 GSa/s
Rise Time	1.2 ns	1.8 ns	3.5 ns	5.8 ns
Input Impedance	1 MΩ    15 pF, 50 Ω		1 MΩ    15 pF	
Timebase Range	1 ns/div ~ 50 s/div	2 ns/div ~ 50 s/div		5 ns/div ~ 50 s/div



Trigger Modes	Edge, Video, Pulse Width, Slope, Alternate
Vertical Sensitivity	1 mV/div ~ 10 V/div
Vertical Resolution	8 bits
Maximum Input voltage	All Inputs 1MΩ  15pF 300V CAT I or 50Ω 5Vrms Max
Cursor Measurement	Manual, Track and Auto Measure modes.
Math	+, -, ×, FFT
Internal Storage	10 waveforms, 10 setups
USB Storage	BMP, CSV, Waveforms and Setups against USB flash drive's limit
Connectivity	USB Device, USB Host, RS-232, Pass/Fail, Out
Display	TFT (64 k color LCD), 320 × 234 resolution
Power Supply	AC:100V~240 V, 45Hz~440Hz, 50VA Max

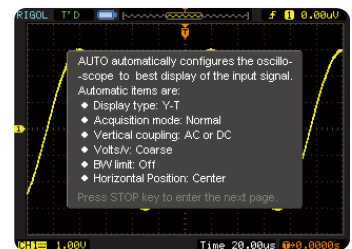
## ► Intuitive User Interface



**Display Intensity Control**  
Adjustable display intensity makes the waveform observations easier

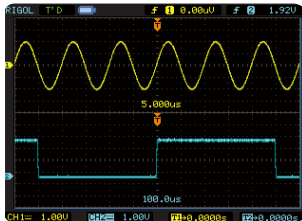


**File System**  
Easy to Use file system supports USB flash drive and local file storage

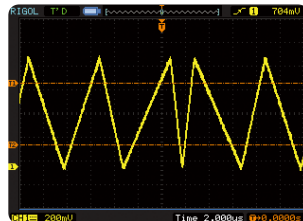


**Built-in Help System**  
Easy access to the Built-in help system by pressing and holding the key for 3 seconds

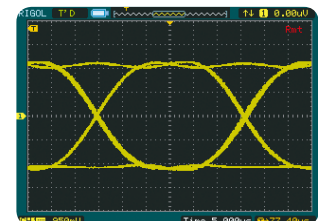
## ► Advanced trigger modes



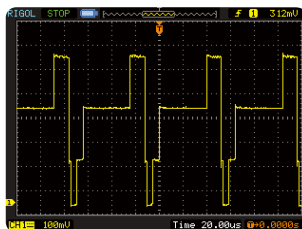
**Rising & Falling Edge trigger**  
Mainly used to view special signals such as eye-diagrams, formally only available in more advanced digital oscilloscopes



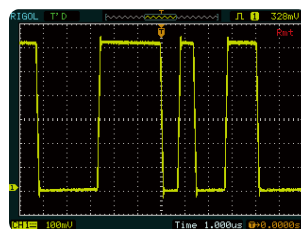
**Pulse Width Trigger**  
Triggers on the conditions of special pulses



**Slope Trigger**  
Triggers on the signals rise time or fall time that is user defined



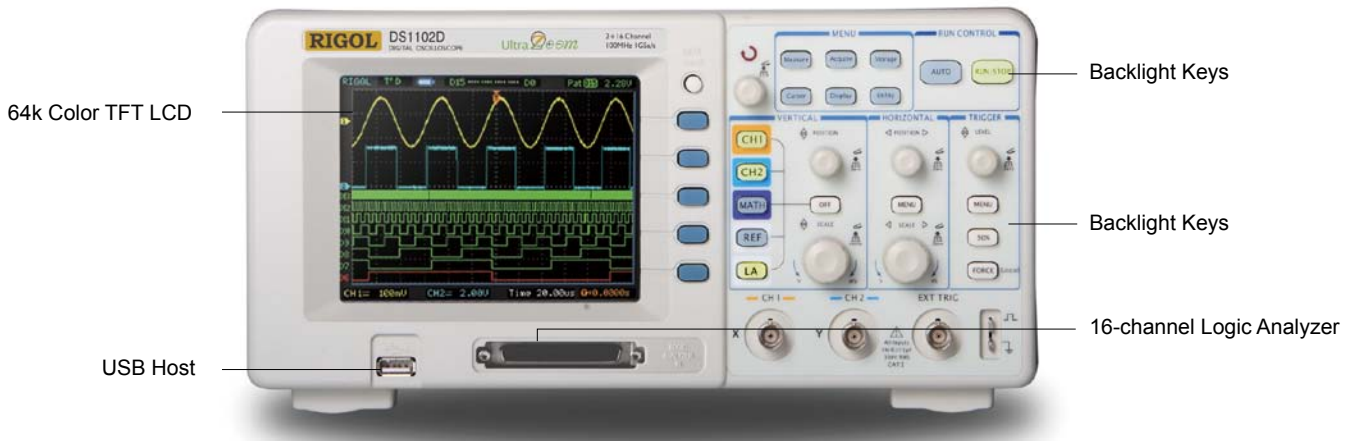
**Video Trigger**  
Trigger according to the selected video signal



**Alternate Trigger**  
Provides a true dual time base display that was common in analog oscilloscopes

# DS1000E • DS1000D Series Digital Oscilloscope

*16 channel Logic Analyzer  
1 GSa/s maximum Real-time Sample Rate  
and 1 Mpts Memory Depth*



Product Dimensions: Width×Height×Depth = 303mm×154mm×133mm Weight: 2.4 kg

## ► Application Areas

- Design and Debug
- Manufacturing
- Education and Training
- Service and Repair

## ► Features and Benefits

1. A true mixed signal oscilloscope with a 16 channel Logic Analyzer (DS1000D)
2. 1 GSa/s maximum Real-time Sample Rate and 1 Mpts Memory Depth
3. Bandwidth options: 50MHz and 100MHz
4. Extensive set of trigger modes including: Edge, Video, Pulse Width, Slope, Alternate
5. 64 k TFT Color LCD, bright and vivid waveform display
6. Direct print to PictBridge compatible printers via USB Device interface
7. Compact design to save your desktop space

Model	DS1102E	DS1052E	DS1102D	DS1052D
Bandwidth	100MHz	50MHz	100MHz	50MHz
Logic Analyzer		x		√

## ► Specifications

Model	DS1102E	DS1052E
	DS1102D	DS1052D
Bandwidth	100MHz	50MHz
Channels	2 Channels + External Trigger	
Real-time Sample Rate	1 GSa/s (Single Channel), 500 Msa/s (Dual Channels)	
Equivalent-time Sample Rate	25 GSa/s	10 GSa/s
Rise Time	3.5 ns	7 ns

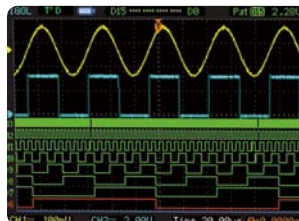
Memory Depth	Channel Mode	Sample Rate	Normal Memory	Long Memory
	Single Channel	1 GSa/s	16 kpts	N.A.
	Single Channel	500 MSa/s or lower	16 kpts	1 Mpts
	Dual Channels	500 MSa/s or lower	8 kpts	512 kpts
Timebase Range	2 ns/div ~ 50 s/div		5 ns/div ~ 50 s/div	
Trigger Modes	Edge, Video, Pulse Width, Slope, Alternate			
Vertical Resolution	8 bits			
Vertical Sensitivity	2 mV/div ~ 10 V/div			
Maximum Input Voltage	All inputs 1 MΩ    15 pF 300 V RMS CAT I			
Input Coupling	DC, AC, GND			
Roll Range	500 ms/div ~ 50 s/div			
Cursor Measurements	Manual, Track and Auto Measure modes			
Math	+,-, ×,FFT			
Internal Stroge	10 Waveforms and 10 Setups			
USB Storage	BMP, CSV, Waveforms and Setups			
Connectivity	USB Device, USB Host, RS-232, P/F Out			
Display	5.6" TFT (64 k, Color LCD ), 320×234 resolution			
Power Supply	AC: 100 ~ 240 VACRMS, 45 ~ 440 Hz, CAT II, 50 VA Max			
MSO Logic Analyzer	DS1102D		DS1052D	
Channels	16 logic Channels			
Sample Rate	200 MSa/s (each channel)			
Record Length	512 kpts (each channel)			
Trigger Modes	Pattern, Duration			
Threshold Selections	TTL=1.4 V, CMOS=2.5 V, ECL=-1.3 V, USER=-8 V to + 8 V			

## ► DS1000D Logic Analyzer Module

Mixed Signal Oscilloscope (MSO) with 16 channels Logic Analyzer (LA). LA is divided into two groups: D7-D0, D15-D8. Each works separately.

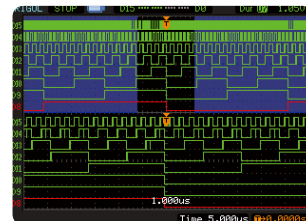


Logic Analyzer Module



Pattern Trigger

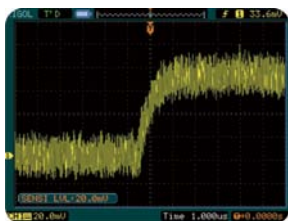
The trigger condition is a combination of the level of the signal and the edge



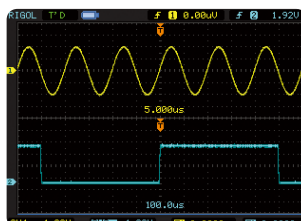
Duration Trigger

A combination of Pattern Trigger and Pulse Width Trigger capabilities make isolation of events easy

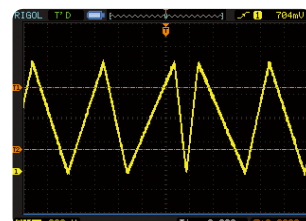
## ► Advanced trigger modes



Adjustable Trigger Sensitivity  
The ability to filter noise from the signal avoids false triggers



Alternate Trigger  
Provides a true dual timebase display



Slope Trigger  
Triggers on the signals rise time or fall time is user defined

# VS5000 series Digital Oscilloscope

16-channel Logic Analyzer  
1 Mpts Memory Depth



Product dimensions: width×height×depth=141mm×45mm×217mm weight: 0.7 kg

## ► Application Areas

- Design and debug
- Education and Training
- Service and Repair
- Field Test and service

## ► Features and Benefits

1. A true mixed signal oscilloscope with a 16 channel logic analyzer
2. 400 MSa/s Real-time Sample Rate and 25 GSa/s Equivalent-time Sample Rate
3. 1 Mpts Memory Depth
4. Ultra compact design
5. High speed USB 2.0 and LAN interfaces

Model	VS5202	VS5102	VS5062	VS5042	VS5202D	VS5102D	VS5062D	VS5042D
Bandwidth	200 MHz	100 MHz	60 MHz	40 MHz	200 MHz	100 MHz	60 MHz	40 MHz
Logic Analyzer	x				√			

## ► Specifications

Model	VS5202	VS5102	VS5062	VS5042
Bandwidth	200 MHz	100 MHz	60 MHz	40 MHz
Memory Depth	1 Mpts (512 kpts on 2 channels)			
Channels	2 channels + external trigger			
Real-time Sample Rate	400 MSa/s			
Equivalent-time Sample Rate	25 GSa/s		10 GSa/s	5 GSa/s
Rise Time	1.8 ns	3.5 ns	5.8 ns	8.7 ns
Timebase Range	2 ns/div ~ 50 s/div		5 ns/div ~ 50 s/div	10 ns/div ~ 50 s/div
Trigger Modes	Edge, Video, Pulse Width, Slope, Alternate			



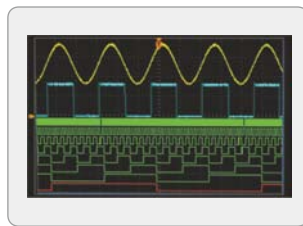
Model	VS5202D	VS5102D	VS5062D	VS5042D
Bandwidth	200 MHz	100 MHz	60 MHz	40 MHz
Memory Depth	1 Mpts (512 kpts on 2 channels) 512 kpts on Logic Analyzer			
Channels	2 channels + external trigger + 16 logic channels			
Real-time Sample Rate	400 MSa/s (200MSa/s on 2 channels), 200 MSa/s on Logic Analyzer			
Equivalent-time Sample Rate	25 GSa/s		10 GSa/s	5 GSa/s
Rise Time	1.8 ns	3.5 ns	5.8 ns	8.7 ns
Timebase Range	2 ns/div ~ 50 s/div		5 ns/div ~ 50 s/div	10 ns/div ~ 50 s/div
Trigger Modes	Edge, Pulse Width, Video, Slope, Alternate, Pattern, Duration			

Common Parameters	
Input Impedance	1 MΩ  15 pF
Vertical Sensitivity	2 mV/div~10V/div
Maximum Input voltage	All Inputs 1 MΩ  15 pF 400V Max CATI
Connectivity	USB Device, LAN
Power Supply	AC Adapter: 100V-240 V, 50Hz-60Hz; DC 5 V/3 A

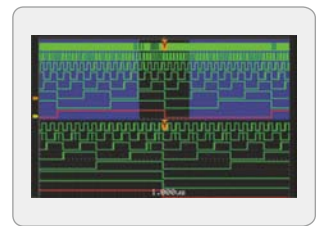
### ► Logic Analyzer Module



Logic Analyzer Module  
Same MSO as the RIGOL digital oscilloscopes

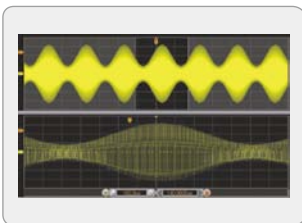


Duration Trigger  
Triggers on a combination of Pattern Trigger and Pulse Width Trigger that makes isolation of events easy



Pattern Trigger  
Triggers on a combination of the levels of the signal and the edges

### ► UltraZoom Technology



The RIGOL Proprietary Deep Memory Technology—UltraZoom

# DAS1030A series Spectrum Analyzer

The LCD display is an 8.5 inch widescreen with 800 x 480 high resolution and fine spectral lines for displaying large data sets (601 display points in normal and 761 points in full screen mode)

Special menu design keeps many of the operation menus in the same interface without paging

Clear keyboard division and button layout bring better usability to the instrument



One-key for saving results

common shortcut key design including L-Peak and R-Peak enhance your working efficiency

designed with broad uses in mind, the knob gives users more freedom with parameter modification and cursor positioning

## ► Features and Benefits

- |                                                  |                                                                                         |
|--------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1. 9 kHz - 3 GHz Frequency Range                 | 8. Built-in lithium battery that can provide 3 hours continuous operation (option)      |
| 2. -148 dBm Displayed Average Noise Level (DANL) | 9. Breadth of measurement functions and automatic settings provide ultimate flexibility |
| 3. -88 dBc/Hz@10 kHz Phase Noise (typ.)          | 10. 8.5 inch widescreen display with clear, vivid, and easy to use graphical interface  |
| 4. Overall Amplitude accuracy <1.0 dB            | 11. Various interface options such as LAN/USB host, USB device, VGA or GPIB (option)    |
| 5. 10 Hz Minimum Resolution Bandwidth (RBW)      | 12. Compact design with a weight of only 13.7 lbs (without battery)                     |
| 6. Standard with Preamplifier                    |                                                                                         |
| 7. 3 GHz Tracking Generator (option)             |                                                                                         |

## Advanced Performance and stability

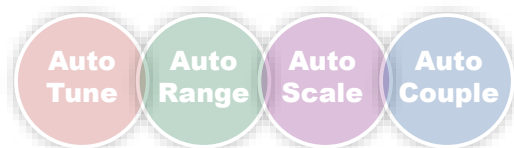
Stability and precision is the primary design goal of the Series DSA1000A. We started with an all digital IF core. With the minimum 10Hz resolution bandwidth, -88dBc/Hz phase noise (typical) at 10kHz offset, up to -148dBm displayed average noise level (10Hz RBW, standard preamplifier on) and less than 1.0dB total amplitude error, the Series DSA1000A makes high precision measurements easier than ever whether the application calls for low noise or narrow resolution.

## Breadth of measurement functions and automatic settings provide ultimate flexibility

DSA1000A provides a series of automatic setting functions such as Auto Tune, Auto Range, Auto Scale and Auto Couple that enable the analyzer to acquire signals and match parameters automatically, instead of the manual process used by a traditional analyzer. In addition, the User and Factory settings under the Preset function enable users to quickly and easily recall previous measurement settings.

## Incomparable Value

With the Series DSA1000A get a high quality spectrum analyzer without the price tag. This lowers the investment whether you are in stages related to research and development or manufacturing and maintenance. Don't let instrumentation costs dictate resource allocation. With our available calibration and maintenance training as well as firmware updates never regret a purchase because of total cost of ownership.



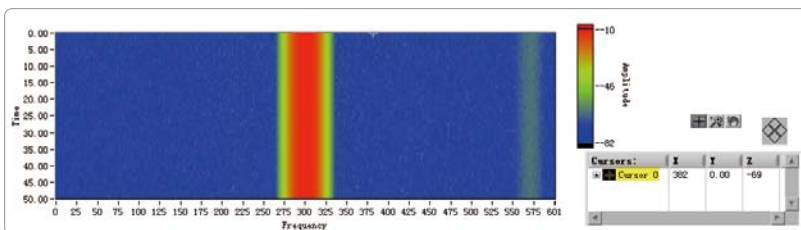
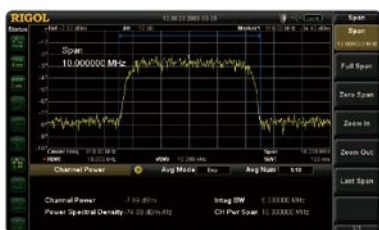
## Benefits of Rigol's all digital IF design

1. The ability to measure smaller signals: on the basis of this technology, the IF filter enables smaller bandwidth settings, which greatly reduce the displayed average noise level.
2. The ability to distinguish between small signals by frequency: using the IF filter with the smallest bandwidth setting it is possible to make out signals with a frequency difference of only 10Hz.
3. High precision amplitude readings: this technology almost eliminates the errors generated by filter switching, reference level uncertainty, scale distortion, as well as errors produced in the process of switching between logarithmic and linear display of amplitude when using a traditional analog IF design.
4. Higher reliability: compared with traditional analog designs, the digital IF greatly reduces the complexity of the hardware, the system instability caused by channel aging, and the temperature sensitivity that can contribute to parts failure.
5. High measurement speed: the use of digital IF technology improves the bandwidth precision and selectivity of the filter, minimizing the scanning time and improving the speed of the measurement.

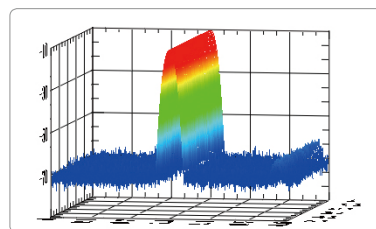
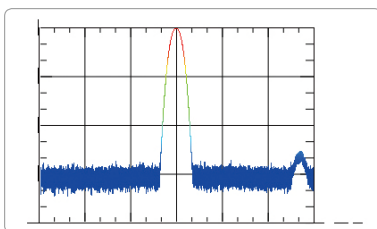
## Breadth of measurement functions enhance value:

The Series DSA1000A has many measurement functions, including Time domain Power, Channel Power, Adjacent-channel Power, Occupied Bandwidth, Carrier to Noise Ratio, Harmonic Distortion, Intermodulation Distortion, Frequency Count, N dB, Noise Marker and so on, to meet the requirements of a broad set

of user's measurements. In addition the software displays waterfall curves to expand the measurement capabilities to even more applications.



Peak	F Axis	Amplitude
1	10.000000 MHz	-61.21 dBm
2	30.000000 MHz	-43.91 dBm
3	40.000000 MHz	-71.95 dBm
4	50.000000 MHz	-74.74 dBm
5	11.400000 MHz	-78.59 dBm
6	85.800000 MHz	-45.59 dBm
7	56.800000 MHz	-25.93 dBm
8	81.000000 MHz	-45.93 dBm
9	45.000000 MHz	-81.53 dBm



## Flexible connectivity

With the available interfaces for the Series DSA1000A, remote control is easy through USB, LAN, or GPIB. Integrate a test system quickly with standard SCPI commands.

## Compact and rugged design

The compact and rugged design makes the Series DSA1000A ideal for many portable and field applications. Spot tests are easier than ever with a small, light weight (13.7 lbs plus the battery) analyzer with 3 hour battery operation, easy carry system, and extra storage space (nonvolatile memory) onboard as well as the ability to store data directly to a USB flash device.

<b>USB host</b>	USB host is available to use a USB flash device to save the instrument settings and history data as well as for firmware updates
<b>USB device</b>	USB device is available for printing with a PictBridge printer, or to connect as a TMC instrument
<b>LAN</b>	LXI-C is standard and support for VISA control over ethernet is included
<b>GPIB</b>	Add a GPIB port with a USB-GPIB module (optional)
<b>VGA</b>	Connection for extending screen to an external monitor is provided for demonstrations and training

## ► Specifications

Specifications are valid after 30 minute warm up time with a valid calibration.

### Frequency

Frequency			Frequency Span		
Frequency Range	DSA1020A	9 kHz to 2 GHz	Range	DSA1030A	0 Hz, 100 Hz to 3 GHz
Frequency Resolution	DSA1030A	9 kHz to 3 GHz	Uncertainty		$\pm$ span / (sweep points-1)
		1 Hz	<b>SSB phase noise</b>		
<b>Internal Frequency Reference</b>			Carrier Offset	10 kHz	<-88 dBc/Hz typ.
Reference Frequency		10 MHz		100 kHz	<-100 dBc/Hz typ.
Aging Rate		<3 ppm/year		1 MHz	<-110 dBc/Hz typ.
Temperature Drift	20°C to 30°C	<3 ppm	Note: typical $f_c$ = 500 MHz, RBW $\leq$ 1 kHz, sample detector, and trace average $\geq$ 50.		
<b>Frequency Readout Accuracy</b>			<b>Bandwidths</b>		
Marker Resolution	span/(sweep points-1)		Resolution Bandwidth (-3 dB)	10 Hz to 1 MHz, in 1-3-10 sequence	
Marker Uncertainty	$\pm$ (frequency indication $\times$ frequency reference uncertainty +1% $\times$ span + 10% $\times$ resolution bandwidth + marker resolution)		RBW Uncertainty	< 5%, nominal	
			Resolution Filter Shape Factor (60 dB: 3 dB)	< 5, nominal	
<b>Marker Frequency Counter</b>			Video Bandwidth (-3 dB)	1 Hz to 3 MHz, in 1-3-10 sequence	
Resolution	1 Hz, 10 Hz, 100 Hz, 1 kHz		Note: Frequency Reference Uncertainty = (aging rate $\times$ period since adjustment + temperature drift).		
Uncertainty	$\pm$ (frequency indication $\times$ frequency reference uncertainty + counter resolution)				

### Amplitude

Range		DANL to +30 dBm
CW RF Power	RF attenuation $\geq$ 20 dB	33 dBm (1W)
Note: when input level >33 dBm, the protection switch will be on.		
<b>Displayed Average Noise Level (DANL)</b>		
0dB RF attenuation, RBW=100Hz, VBW=10Hz, sample detector, trace average $\geq$ 50		
		<-85 dBm - 3 f(MHz)dB, typ. -125 dBm
	10 MHz to 2.5 GHz	<-127dBm + 3 $\times$ (f/GHz)dB, typ. -130 dBm
		<-115 dBm
DANL (Peamplifier On)	100 kHz to 1 MHz	<-103 dBm
		<-103 dBm - 3 f(MHz)dB, typ. -143 dBm
	10 MHz to 2.5 GHz	<-145 dBm + 3 $\times$ (f/GHz)dB, typ. -148 dBm
		<-133 dBm
Logarithmic Level Axis		1 dB to 200 dB
Linear Level Axis		0 to Reference Level
Number of Display Points	Normal	601
	Full Screen	751
Number of Traces		3 + math trace
Trace Detectors		Normal, Positive-peak, Negative-peak, Sample, RMS, Voltage Average
Trace Functions		Clear Write, Max Hold, Min Hold, Average, View, Blank
Units of Level Axis		dBm, dBmV, dB $\mu$ V, nV, $\mu$ V, mV, V, nW, $\mu$ W, mW, W
Absolute Amplitude Uncertainty		
Uncertainty	$f_c$ =50 MHz, peak detector, preamplifier off, 10 dB RF attenuation, input signal=-10 dBm, 20°C to 30°C	$\pm$ 0.4 dB
<b>Reference Level</b>		
Range		-100 dBm to +30 dBm, in 1 dB step
Resolution	Log Scale	0.01 dB
	Linear Scale	4 digits
Uncertainty		<0.1 dB, nominal



<b>Level Measurement Uncertainty</b>		
Level Measurement Uncertainty	95% confidence level, S/N>20 dB, RBW=VBW=1kHz, preamplifier off, 10 MHz < fc < 3 GHz, 20°C to 30°C	<1.0 dB, nominal
<b>Intermodulation</b>		
Second Harmonic Intercept (SHI)		+35 dBm
Third-order Intermodulation (TOI)	Fc >30 MHz	+7 dBm
<b>Spurious Responses</b>		
Image Frequency		<-60 dBc
Intermediate Frequency		<-60 dBc
Spurious Response, Inherent		<-88 dBm, typ.
Spurious Response, Others	referenced to local oscillators, referenced to A/D conversion, referenced to subharmonic of first LO, referenced to harmonic of first LO	<-60 dBc
Input Related Spurious	Mixer level: -30 dBm	<-60 dBc, typ.

## Sweep

Sweep Time Range	100 Hz ≤ Span ≤ 3 GHz Span = 0 Hz	10 ms to 3000 s 20 μs to 3000 s
Sweep Time Uncertainty	100 Hz ≤ Span ≤ 3 GHz Span = 0 Hz	5%, nominal 0.5%, nominal
Sweep Mode		Continuous, single

## Trigger Functions

Trigger Source		Free run, Video, External
External Trigger Level		5V TTL level

## Tracking Generator

<b>TG Output</b>		
Frequency Range	With Opt. DSA1020-TG2 With Opt. DSA1030-TG3	10 MHz to 2 GHz 10 MHz to 3 GHz
Output Level		-20 dBm to 0 dBm, in 1 dB step
Output Flatness	Referenced to 50 MHz	±3 dB

## General Specifications

Mass Memory		Flash disk (internal),
Data Storage Space	Flash disk (internal)	2 G Bytes
<b>Power Supply</b>		
Input Voltage Range, AC		100 V to 240 V, nominal
AC supply frequency		45 Hz to 440 Hz
Input Voltage Range, DC		10 V to 18 V, nominal
Power Consumption		Typ. 35 W, Max 60 W with all options.
Operation Time at DC Power Supply		About 3 hours
<b>Temperature</b>		
Operating temperature range		5°C to 40°C
Storage temperature range		-20°C to 70°C
<b>Dimensions</b>		
	(W × H × D)	399 mm × 223 mm × 159 mm (15.7 inches × 8.78 inches × 6.26 inches)
<b>Weight</b>		
	Without battery pack	6.2kg (13.7lbs)
	With battery pack	7.4kg (16.3lbs)

# DG3000 Series Function/Arbitrary Waveform Generators

*120 MHz maximum output frequency  
Optional Digital Logic Output Module  
512 kpts of Waveform Length*



## ► Application Areas

- Simulation of Analog Sensor and Real World Signals
- In-circuit Functional Test
- Serial Bus Test
- IC Test

## ► Features and Benefits

1. The world's first Mixed Signal Generator (MSG) with 16 logic channels and 2 clock channels
2. Advanced Direct Digital Synthesis (DDS) Technology, 300 MSA/s maximum sample rate and 120 MHz maximum output frequency, 14 bits vertical resolution, 512 kpts of Waveform Length
3. Connectivity: USB Host, USB Device, LAN, GPIB and RS-232
4. Connect to RIGOL DS1000 series digital oscilloscopes directly

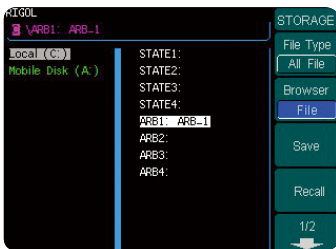
Model	DG3121A	DG3101A	DG3061A
Maximum Output Frequency	120 MHz	100 MHz	60 MHz
Connectivity	USB Device, LAN, GPIB, RS-232, USB Host		
Option	Logic Signal Output Module		

## ► Specifications

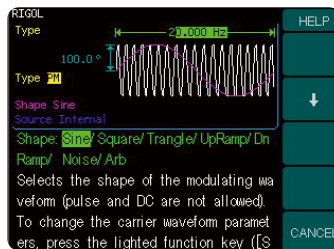
Model	DG3121A	DG3101A	DG3061A
Standard Waveform	Sine, Square, Ramp, Triangle, Pulse, White noise, DC, Index up, Index down, Sinc, Electrocardiogram		
Frequency characteristics			
Sine	1 μHz ~ 120 MHz	1 μHz ~ 100 MHz	1 μHz ~ 60 MHz
Square	1 μHz ~ 60 MHz	1 μHz ~ 50 MHz	1 μHz ~ 30 MHz
Pulse	500 μHz ~ 30 MHz	500 μHz ~ 25 MHz	500 μHz ~ 20 MHz
Ramp	1 μHz ~ 1 MHz	1 μHz ~ 1 MHz	1 μHz ~ 1 MHz
White Noise	50 MHz bandwidth (-3dB)	40 MHz bandwidth (-3dB)	30 MHz bandwidth (-3dB)

Output Mode	
Burst	Count (1 to 65,536 periods), Infinite, gated
Sweep	Linear or Logarithmic
Amplitude Characteristics	
Amplitude	10 mVpp ~ 10 Vpp (into 50 $\Omega$ ) 20 mVpp ~ 20 Vpp (into open circuit)
Modulate Characteristics	
Mode	AM, FM, PM, FSK, PWM-internal or external
Frequency of Modulation Waveform	2 mHz ~ 20 kHz (FSK 2 mHz to 100 kHz)
Arbitrary Waveform Characteristics	
Frequency Range	1 $\mu$ Hz ~ 25 MHz
Waveform Length	2 pts ~ 512 kpts
Amplitude Resolution	14 bits
Sample Rate	300 MSa/s
Arbitrary Waveform Characteristics	
Connectivity	USB Host, USB Device, RS-232, LAN, GPIB
Power Supply	AC, 100-240 V, 45-440 Hz, 50 VA Max

### ► Intuitive User Interface



File System: Easy-to-use  
Support USB flash drive and local files storage



Built-in Help System  
Press and hold a key for 3 seconds to enter help system

### ► Logic Signal Output Module

With the Logic Signal Output Module, RIGOL DG3000 series is the worldwide first Mixed Signal Generator (MSG) featuring 16 digital data channels and 2 clock channels.



Logic Signal Output Module

### ► Optional Accessories



10W Power Amplifier PA1011

### ► Optional Accessories



BNC Cable



RS-232 Cable



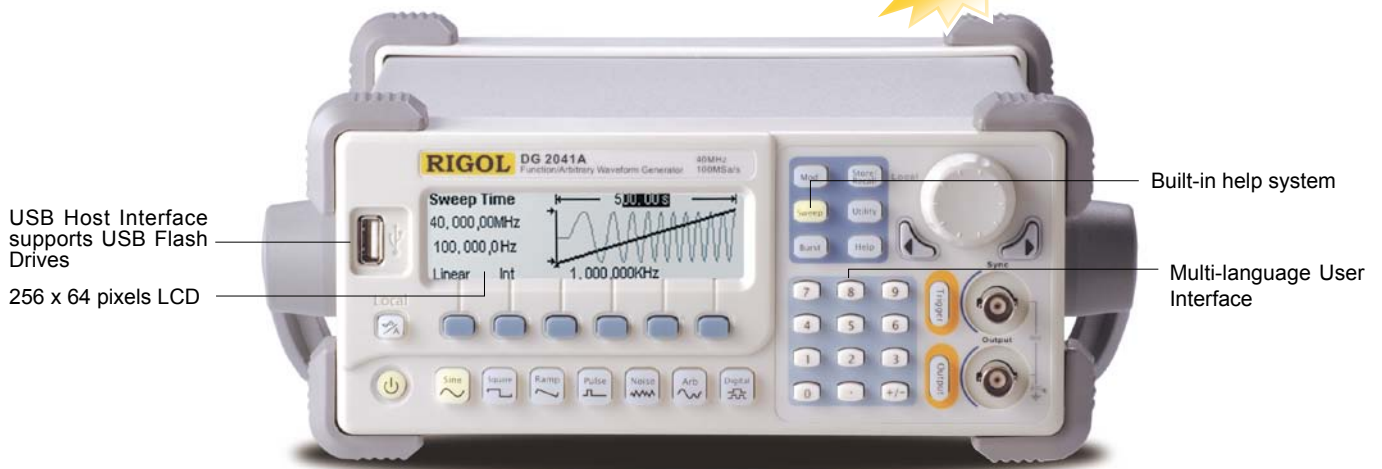
50  $\Omega$  Impedance Adaptor



40 dB Attenuator

# DG2000 Series Function/Arbitrary Waveform Generators

*User Definable Arbitrary Waveform  
512 kpts of Waveform Length*



Product Dimensions: Width×Height×Depth = 232mm×108mm×288mm weight: 2.7 kg

## ► Application Areas

- Simulation of Analog Sensor and Real World Signals
- Education and Training
- In-circuit Functional Test
- Service and Repair

## ► Features and Benefits

1. Advanced Direct Digital Synthesis (DDS) Technology, 100 MSa/s maximum sample rate and 40 MHz maximum output frequency, 14 bits vertical resolution, 512 kpts Waveform Length
2. Connectivity: USB Host, USB Device, LAN, GPIB and RS-232, seamless connectivity with DS series digital oscilloscope
3. Integretes pulse width & setting function, PWM function.

Model	DG2041A
Maximum Output Frequency	40 MHz
Connectivity	USB Device, LAN, GPIB, RS-232,USB Host

## ► Specifications

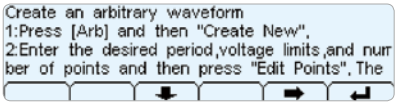
Model	DG2041A
Standard Waveform	Sine, Square, Ramp, Triangle, Pulse, White noise, DC, Index up, Index down, Sinc, Electrocardiogram
Frequency characteristics	
Sine	1 μHz ~ 40 MHz
Square	1 μHz ~ 40 MHz
Pulse	500 μHz ~ 16 MHz
Ramp	1 μHz ~ 400 kHz
White Noise	20 MHz bandwidth (-3dB)
Arbitrary Waveform Characteristics	
Frequency Range	1 μHz ~ 12 MHz
Waveform Length	2 pts ~ 512 kpts
Amplitude Resolution	14 bits
Sample Rate	100 MSa/s




Amplitude Characteristics	
Amplitude	20 mVpp ~ 10 Vpp (into 50 $\Omega$ ) 40 mVpp ~ 20 Vpp (into open circuit)
Modulation Characteristics	
Modulation Mode	AM, FM, PM, FSK, PWM-internal or external
Frequency of Modulation Waveform	2 mHz ~ 20 kHz (FSK 2 mHz to 100 kHz)
Output Mode	
Burst	Count (1 to 1,000,000 periods), Infinite, Gate
Sweep	Linear or Logarithmic
Other Parameters	
Connectivity	USB Host, USB Device, RS-232, LAN, GPIB
Power Supply	AC:100V-240V, 45Hz-440 Hz, 50VA Max

## ► Intuitive User Interface

Create an arbitrary waveform  
1: Press [Arb] and then "Create New",  
2: Enter the desired period, voltage limits, and number of points and then press "Edit Points". The



**Built-in Help System**  
Easy access to Built-in help system by pressing and holding the key for 3 seconds



**File System**  
Easy to Use file system supports USB Flash Memory and local file storage

## ► Optional Accessories



10W Power Amplifier PA1011



BNC Cable



RS-232 Cable



50  $\Omega$  Impedance Adaptor



40 dB Attenuator

# DG1000 Series Function/Arbitrary Waveform Generators



Product Dimensions: Width×Height×Depth = 232mm×108mm×288mm weight: 2.7 kg

## ► Application Areas

- Simulation of Analog Sensor and Real World Signals
- Education and Training
- In-circuit Functional Test
- Service and Repair

## ► Features and Benefits

1. Advanced Direct Digital Synthesis (DDS) Technology, 2 analog channels output, 20 MHz maximum output frequency
2. 100 MSa/s maximum sample rate, 14 bits vertical resolution, 4 kpts Waveform Length
3. Built-in high precise counter, the frequency is up to 200 MHz
4. Connectivity: USB Device and USB Host
5. Connect to RIGOL DS1000 series digital oscilloscopes directly

Model	DG1022	DG1012
Maximum Output Frequency	20 MHz	15 MHz
Connectivity	USB Host, USB Device	

## ► Specifications

Model	DG1022	DG1012
Standard Waveform	Sine, Square, Ramp, Pulse, White Noise and 48 kinds of built-in arbitrary function waveforms	
Frequency characteristics		
Sine	1 μHz ~ 20 MHz	1 μHz ~ 15 MHz
Square	1 μHz ~ 5 MHz	1 μHz ~ 4 MHz
Pulse	500 μHz ~ 3 MHz	500 μHz ~ 2 MHz
Ramp	1 μHz ~ 150 kHz	
White Noise	5 MHz bandwidth (-3dB)	
Arbitrary Waveform	1 μHz ~ 5 MHz	1 μHz ~ 4 MHz

Channel	CH1	CH2
<b>Arbitrary Waveform Characteristics</b>		
Waveform Length	2 pts ~ 4 kpts	2 pts ~ 1 kpts
Amplitude Resolution	14 bits	10bits
Sample Rate	100 MSa/s	
<b>Amplitude Characteristics</b>		
Amplitude	2 mVpp ~ 10 Vpp (into 50 Ω) 4 mVpp ~ 20 Vpp (into open circuit)	2 mVpp ~ 3 Vpp (into 50 Ω) 4 mVpp ~ 6 Vpp (into open circuit)
<b>Modulation characteristics (CH1)</b>		
Modulation Mode	AM, FM, PM, FSK-internal or external	
Frequency of Modulation Waveform	2 mHz ~ 20 kHz (FSK 2mHz to 50kHz)	
<b>Counter</b>		
Range	100 mHz~200 MHz	
<b>Output Mode</b>		
Burst (CH1)	Count (1 to 50,000 periods) Infinite, Gate	
Sweep (CH1)	Linear or Logarithmic	
<b>Other Parameters</b>		
Connectivity	USB Host, USB Device	
Power Supply	AC: 100V-240V, 45Hz-440Hz, 40VA Max	

► Intuitive User Interface

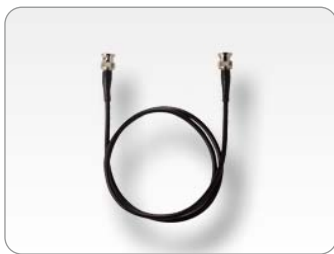
**Burst**  
The DG1000 can output a waveform with a specified number of cycles, called a "burst". A burst can last for a specific number of wav

Built-in Help System  
Easy access to Built-in help system by pressing and holding the key for 3 seconds

Local	State	888.888
UDisk	Data	dg3 SystemUpdate, ldr
All		DG1000 System, ldr

File System  
Easy to Use file system supports USB Flash Memory and local file storage

► Optional Accessories



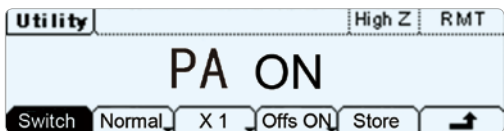
BNC Cable



50 Ω Impedance Adaptor



40 dB Attenuator



10W Power Amplifier PA1011

PA1011 Power Amplifier: 10W maximum power output, 1 MHz full power bandwidth, 50kΩ high input impedance. Adjustable amplifier gain (×1 or ×10), adjustable output polarity (normal or revert), adjustable output offset (-12V ~ +12 V). It has Seamless connectivity with DG1000 through USB. Easy to operate, integrates output protection circuit (Output over-current protection, temperature over-heats protection) ensure a stable reliable, safe work condition.

# VG1000 Series Virtual Function/Arbitrary Waveform Generators



Product Dimensions: Width×Height×Depth=142mm×48mm×215mm Weight: 0.7 kg

## ► Application Areas

- Simulation of Analog Sensor and Real World Signals
- Education and Training
- In-circuit Functional Test
- Service and Repair

## ► Features and Benefits

1. Advanced Direct Digital Synthesis (DDS) Technology, 20 MHz maximum output frequency
2. 100 MSa/s maximum sample rate, 14 bits vertical resolution, 4 kpts Waveform Length
3. Built-in counter offers high accuracy up to 200 MHz
4. Connectivity: USB Device, LAN

Model	VG1021
Maximum Output Frequency	20 MHz
Connectivity	USB Device, LAN

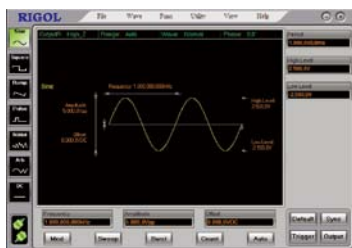
## ► Specifications

Model	VG1021
Standard Waveforms	Sine, Square, Ramp, Pulse, White Noise
Frequency characteristics	
Sine	1μHz ~ 20MHz
Square	1μHz ~ 5MHz
Pulse	500μHz ~ 3MHz
Ramp	1μHz ~ 150kHz
White Noise	5MHz Bandwidth (-3dB)
Arbitrary Waveform	1μHz ~ 5MHz



Arbitrary Waveform Characteristics	
Waveform Length	2 pts ~ 4 kpts
Amplitude Resolution	14 bits
Sample Rate	100 MSa/s
Amplitude Characteristics	
Amplitude	2 mVpp ~ 10 Vpp (into 50 $\Omega$ ) 4 mVpp ~ 20 Vpp (into open circuit)
Modulation characteristics	
Modulation Mode	AM, FM, PM, FSK-internal or external
Frequency of Modulation Waveform	2 mHz ~ 20 kHz (FSK 2mHz to 50kHz)
Counter	
Range	100 mHz~200 MHz
Output Mode	
Burst	Count (1 to 50,000 periods) Infinite, Gate
Sweep	Linear or Logarithmic
Other Parameters	
Connectivity	USB Device, LAN
Power Supply	AC:100V-240V, 45Hz-440Hz, 40VA Max

## ► Intuitive User Interface



The supplied PC-control software is powerful yet easy to operate. The intuitive interface and controls makes the software easy to learn and easy to use.

## ► Optional Accessories



BNC Cable



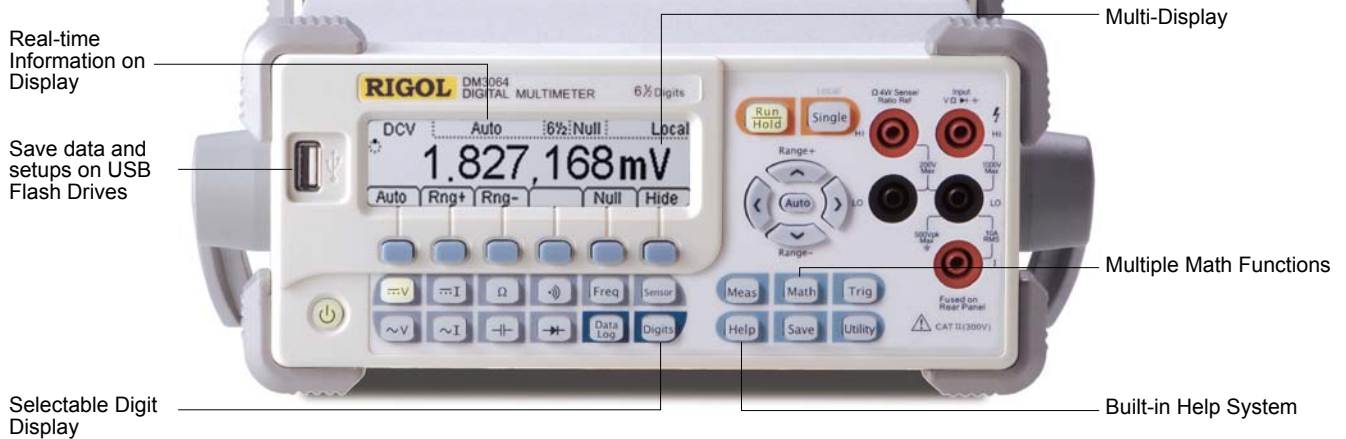
50  $\Omega$  Impedance Adaptor



40 dB Attenuator

# DM306X series 6½ Digital Multimeter

True 6½ digits resolution  
50 K/s Sample Rate  
16-Channel Multiplexer Module



Product Dimension: Width×Height×Depth = 232mm×107mm×291mm Weight: 2.5 kg

## ► Application Areas

- Manufacturing Test
- High Speed, High Resolution Data Acquisition
- Signal Monitoring
- Aging Test
- User Defined Test (Support most sensors)

## ► Features and Benefits

1. True 6½ digits resolution (2,400,000-count)
2. Up to 50 K/s Sample Rate, 512 K of Non-volatile Memory, and 2 M of Volatile Memory
3. Patented Any Sensor test capability
4. Up to 16 Channels Multiplexer Module: Date acquisition, scanning and programmable automatic measurement
5. 256×64 pixels LCD display, to support multi-display and screen menu
6. Connectivity: RS-232, USB Host, USB Device, GPIB (optional), LAN (optional)

Model	DM3061	DM3062	DM3064
Maximum Output Frequency	6½ digits		
Connectivity	RS-232, USB Host, USB Device	Plus LAN and GPIB	Plus LAN, GPIB and Multiplexer Module

## ► Specifications

Measurement Function	Range	Frequency Range/ Test Current	Accuracy:
DC Voltage	200 mV~1000 V		1 Year±(% of reading + % of range) 0.0045+0.0005
AC Voltage (True RMS)	200 mV~750 V	3 Hz~300 kHz	0.08+0.06
DC Current	2 mA~10 A		0.065+0.008
AC Current (True RMS)	20 mA~10 A	3 Hz~10 kHz	0.18+0.06

Measurement Function	Range	Frequency Range / Test Current	Accuracy:
			1 Year±(% of reading + % of range)
Resistance(2-wire and 4-wire)	200 Ω~100 MΩ		0.014+0.001
Capacitance	2 nF~200 uF		1+0.5
Diode	2.4 V	1 mA	0.020+0.030
Continuity	2000 Ω	1 mA	0.020+0.020
Frequency,Period Accuracy ±(% of reading)	200 mV~750 V	3 Hz~300 kHz	0.02

## ► Other Parameters

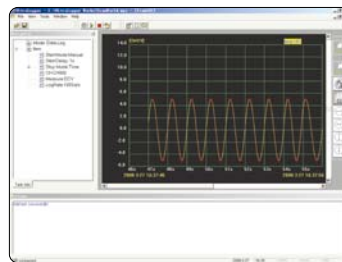
24 Measurement Functions	DC voltage and current, AC voltage and current, 2-wire and 4-wire Resistance, Capacitance, Continuity Test, Diode Test, Frequency, Period, Ratio Test , Temperature and Any Sensor Test
	Math Functions: Max, Min, Avg, High Limit, Low Limit, dBm, dB, Null
	Data acquisition: data logging, scanning, auto test
Other Functions	Built-in memories: Store up to 10 Setups, 10 Data records and 10 Sensor descriptions
	True RMS AC voltage and current
	Input impedance >10 GΩ
	DC voltage range up to 48 V (± 24 V )
Application Software	UltraLogger: For scan measurement and data acquisition control
	UltraSensor: For any sensors measurement
Maximum Input	DC voltage 1,000 VDC, AC voltage 750 Vrms AC, DC and AC max external current 10 A, internal 12 A double fuses
Safety	Measurement of CAT II 300V, CAT I 1000V, Pollution level 1
Shock and Vibration	MIL-T-28800E, type III, class 5 (only sine)
Power Supply	AC 100V-120V / 200V-240V,45Hz - 65Hz, 20VA Max

## ► Other Parameters

The module provides up to 16 channels of acquisition. The easy to use software allows the user to scan any or all of the 16 channels and save the data into the memory.

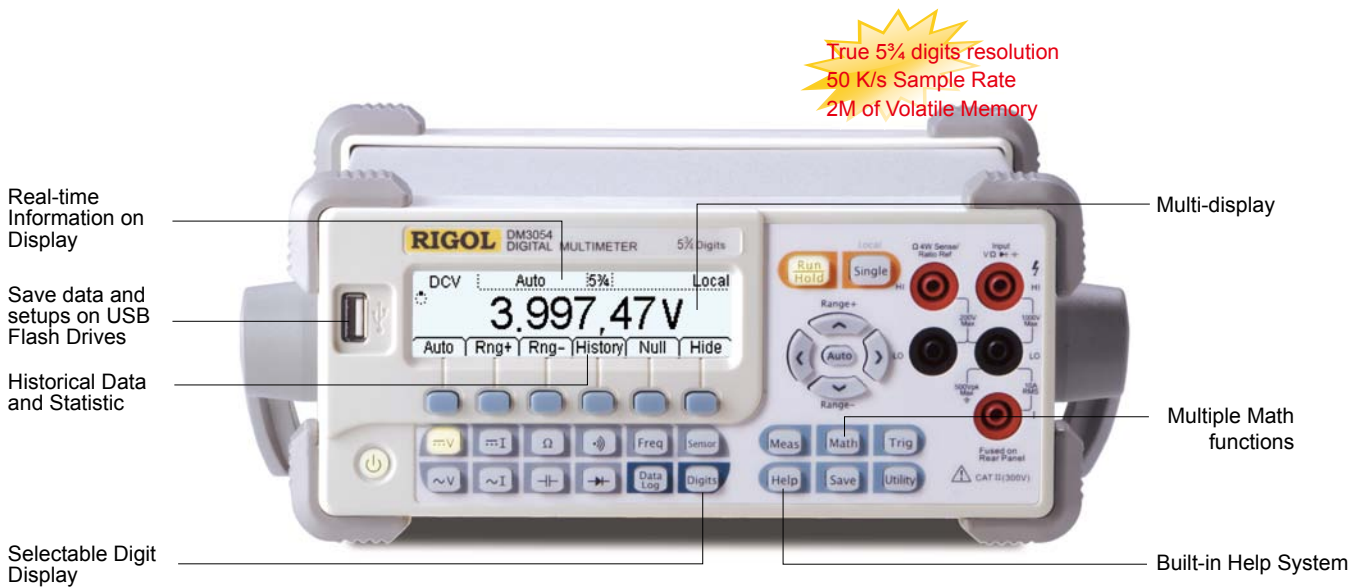


Multiplexer Module



UltraLogger Software Interface

# DM305X series 5<sup>3</sup>/<sub>4</sub> Digital Multimeter



Product Dimension: Width×Height×Depth = 232mm×107mm×291mm Weight: 2.5 kg

## ► Application Areas

- Manufacturing Test
- Signal Monitoring
- High Speed, High Resolution Data Acquisition
- Aging Test
- User Defined Test (Support most sensors)

## ► Features and Benefits

1. True 5<sup>3</sup>/<sub>4</sub> digits resolution (480,000-count)
2. Up to 50 K /s Sample Rate, 512 K of Non-volatile Memory and 2 M of Volatile Memory
3. Patented Any Sensor test capability
4. Up to 16 Channels Multiplexer Module: Data acquisition, scanning and programmable automatic measurements
5. 256×64 pixels LCD display, to support multi-display and screen menu
6. Connectivity: RS-232, USB Host, USB Device, GPIB (optional), LAN (optional)

Model	DM3051	DM3052	DM3054
Maximum Output Frequency	5 <sup>3</sup> / <sub>4</sub> digits		
Connectivity	RS-232, USB Host, USB Device	Plus LAN and GPIB	Plus LAN, GPIB and Multiplexer Module

## ► Specifications

Measurement Function	Range	Frequency Range/Test Current	Accuracy:
DC Voltage	400 mV~1000 V	10Hz~100 kHz	1 Year ±(% of reading + % range) 0.025+0.006
AC Voltage (True RMS)	200 mV~750 V		0.20 + 0.1
DC Current	2 mA~10 A	10Hz~10 kHz	0.050+0.008
AC Current (True RMS)	20 mA~10 A		0.5+0.1

Measurement Function	Range	Frequency Range/ Test Current	Accuracy:
			1 Year $\pm$ (% of reading + % range)
Resistance (2-wire and 4-wire)	400 $\Omega$ ~100 M $\Omega$		0.015+0.006
Capacitor	4 nF~200 uF		1+0.5
Diode	2.4 V	1mA	0.05 + 0.010
Continuity	2000 $\Omega$	1 mA	0.05 + 0.010
Frequency,Period Accuracy $\pm$ (% of reading)	200 mV ~ 750 V	3 Hz~300 kHz	0.02
	20 mA ~10 A	3 Hz~10 kHz	0.02

Note: All the indicators are the typical value under standard test situation

## ► Other Parameters

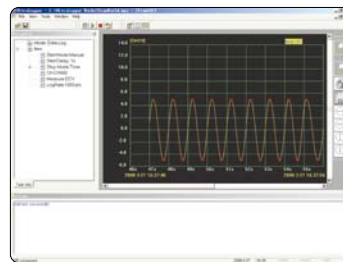
24 Measurement Functions	DC voltage and current, AC voltage and current, 2-wire and 4-wire Resistance, Capacitance, Continuity Test, Diode Test, Frequency, Period, Ratio Test and Any Sensor Test
Math Functions	Math Functions: Max, Min, Avg, Histogram, High Limit, Low Limit, dBm, dB, Null Data acquisition: data logging, scanning
Other Functions	Built-in memories: Store up to 10 Setups, 10 Data records and 10 Sensor descriptions True RMS AC voltage and current Input impedance >10 G $\Omega$ DC voltage range up to 48 V ( $\pm$ 24 V )
Application Software	UltraLogger: For scan measurement and data acquisition control UltraSensor: For any sensors measurement
Maximum Input Safety	DC voltage 1,000 VDC, AC voltage 750 Vrms AC, DC and AC max external current 10 A, internal 12 A double fuses Measurement of CAT II 300V, CAT I 1000V, Pollution level 1
Shock and Vibration	MIL-T-28800, type III, class 5 (only sine)
Power Supply	AC: 100V-240V $\pm$ 10%, 45Hz-65Hz, 20VA Max

## ► Multiplexer Module

The module provides up to 16 channels of acquisition. The easy to use software allows the user to scan any or all of the 16 channels and place the data into the memory.



Multiplexer Module

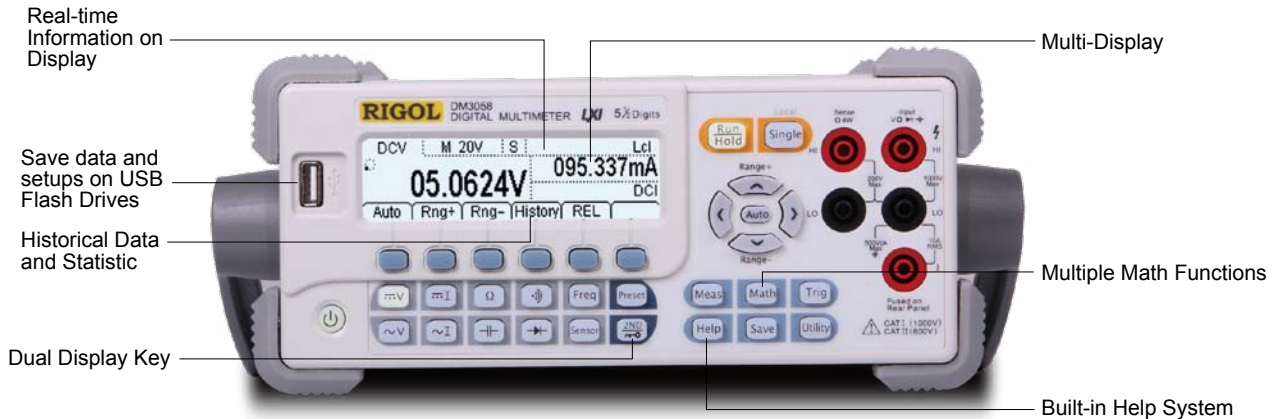


UltraLogger Software Interface



# DM3058 Digital Multimeter

*GP-IB, LXI, RS-232 and USB (Host and Device interfaces)  
Fastest and the most accurate 5½ digit DVM in its class*



Product Dimension: Width×Height×Depth = 232mm×107mm×291mm Weight: 2.5 kg

## ► Application Areas

- Manufacturing Test
- Scientific research and Education
- Quality Test
- Maintenance
- Laboratory

## ► Features and Benefits

1. True 5½ digits resolution(240,000-count)
2. 123 rdgs/s Maximum Reading Speed
3. 0.015% accuracy of DC Voltage
4. Command compatibility: Replace mainstream DMM randomly via the compatibility of their command
5. Patented Any Sensor test capability
6. 256×64 pixels LCD display, to support multi-display and screen menu
7. Connectivity: GPIB, LAN(LXI Class C), RS-232, USB Host and USB Device

## ► Specifications

Measurement Function	Range	Frequency Range/Test Current	Accuracy: 1 Year ± (%of reading +%of range)
DC Voltage	200 mV ~ 1000 V		0.015 + 0.003
DC Current	200 uA ~ 10 A		0.055+0.005
AC Voltage (RMS)	200 mV ~ 750 V	20 Hz ~ 100 kHz	0.20 + 0.05
AC Current (RMS)	20 mA ~ 10 A	20 Hz ~ 10 kHz	0.30+0.10

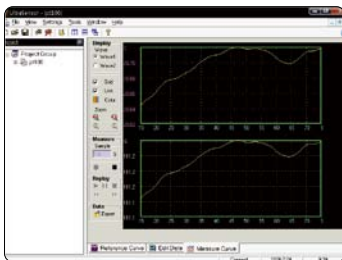
Measurement Function	Range	Frequency Range/Test Current	Accuracy:1 Year ± (%of reading +%of range)
Resistance (2-wire and 4-wire)	200 Ω ~ 100 MΩ		0.020 + 0.003
Capacitance	2 nF ~ 10000 uF		1 + 0.5
Diode	2.4 V	1 mA	0.05 + 0.01
Continuity	2 kΩ	1 mA	0.05 + 0.01
Frequency and Period	200 mV ~ 750 V	20 Hz ~ 1 MHz	0.01+0.003

Note: All the indicators are the typical value under standard test situation

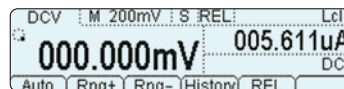
## ► Other Parameters

Measurement Function	DC Voltage, DC Current, AC Voltage (RMS), AC Current (RMS), Resistance (2-wire and 4-wire), Capacitance, Diodes, Frequency and Period, Continuity, Short Current, Any Sensor
Math	“Pass/Fail” Limit Test, Standard Deviation, Histogram, Relatively, Null, Max/Min/Avg, dBm, dB
Other Functions	Built-in 10 groups of configuration storage,10 groups of configuration storage of any sensor, 2048 historical reading data record and check, 10 groups of historical datum storage, Exterior trigger input and VMC output, Reading hold, Single trigger
Display Characteristic	Multi-display, Menu, Multi-language help and Waveform display
Safety	CAT I 1000 V/CAT II 600 V, Pollution level 2
Shock and Vibration	MIL-T-28800E, type III, class 5 (sine)
Power Supply	AC 100 V ~ 120 V 45 Hz ~ 440 Hz AC 200 V ~ 240 V 45 Hz ~ 66 Hz 20 VA Max

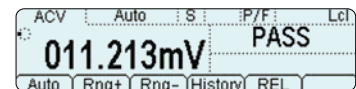
## ► Advanced Performance



Ultrasensor Software Interface



Pass / Fail



Multi-Display

# DP1308A Programmable DC Power Supply



Product Dimension: Width×Height×Depth = 235mm×155mm×384mm Weight: 8.5 kg

## ► Application Areas

- Product Research and Development
- Industry Control
- Radio and TV Broadcasting
- Telecommunication
- Mobile Communication

## ► Features and Benefits

1. 4.3 inch 16M TFT LCD with 480×272 resolution displays information clearly
2. Each Channel is programmable and can be operated alone or simultaneously, total output power up to 80W
3. High performance, powerful functions, intuitive user interface, outstanding value
4. Comprehensive self-protection mechanism, includes OVP, OCP, OTP
5. Support USB flash drive, easy for storage and recall of system configuration
6. Completed Connectivity: USB Device, USB Host, LAN (LXI-C Class), GPIB
7. Industry leading programming control design, supports SCPI, LXI-C certified

## ► Specifications

Model	DP1308A		
Channel	+6V	+25V	-25V
DC Output (0°C to 40°C)			
Voltage	0~+6V	0~ + 25V	0 ~ -25V
Current	0~5A	0~1A	0 ~ 1A
Over-voltage Protection	0.1V ~ 6.5V	0.1V ~ 27V	-0.1V ~ -27V
Over-current Protection	0.1A ~ 5.5A	0.1A ~ 1.2A	0.1A ~ 1.2A
Load Regulation ± % of output + offset			
Voltage	<0.01%+2mV		
Current	<0.01%+250µA		
Line Regulation ± % of output + offset			
Voltage	<0.01%+2mV		
Current	<0.01%+250µA		

Ripple and Noise (20Hz ~ 20MHz)			
Normal Mode Voltage	<350 $\mu$ Vrms / 2mVpp		
Normal Mode Current	<2 mArms	<500 $\mu$ Arms	
Common Mode Current	<1.5 $\mu$ Arms		
Accuracy <sup>[N]</sup> 12 Months (25°C + 5°C), $\pm$ (% of output + offset)			
Programme	Voltage	0.1%+5mV	0.05%+20mV
	Current	0.2%+10mA	0.15%+4mA
Readback	Voltage	0.1%+5mV	0.05%+10mV
	Current	0.2%+10mA	0.15%+4mA
Resolution			
Programme	0.5mV / 0.5mA		1.5mV / 0.1mA
Readback	0.5mV / 0.5mA		1.5mV / 0.1mA
Electric Meter	1mV / 1mA		10mV / 1mA
Instant Response Time			
When output current change from FULL load to HALF load, or from HALF load to FULL load, the output voltage takes less than 50 $\mu$ s to restore to 15mV or less			
Temperature Coefficient per°C (%output + offset)			
Voltage	0.01%+2mV		0.01%+3mV
Current	0.02%+3mA		0.01%+0.5mA
Power			
AC input (50Hz - 60Hz)	100Vac $\pm$ 10%, 115Vac $\pm$ 10%, 220Vac $\pm$ 10%, 230Vac $\pm$ 10%		

[N]: At 25°C after 1 hour of warming up.

## ► Advanced Performance



4.3 inch 16M TFT LCD with 480x272 resolution offers the best view experience in its class.



Each channel can be set for timing output users can turn on this function and simulate the real power status through voltage, current and time settings.



Waveform display function shows the Voltage/Current waveform in real-time, combines numeric display of voltage, current and power value in an easy view



DP1308A supports voltage track mode. Any change of the signal in proper range will be reflected in the other channels.



DP1308A supports 4 groups of system setting storage and recall

## RIGOL Distribution Network--Around the World



RIGOL has 10 sales offices in China along with a branch office in North America. Currently we offer our products and services in over 60 countries or regions on six continents utilizing more than 150 distributors and representatives.





## Customer Service and Support

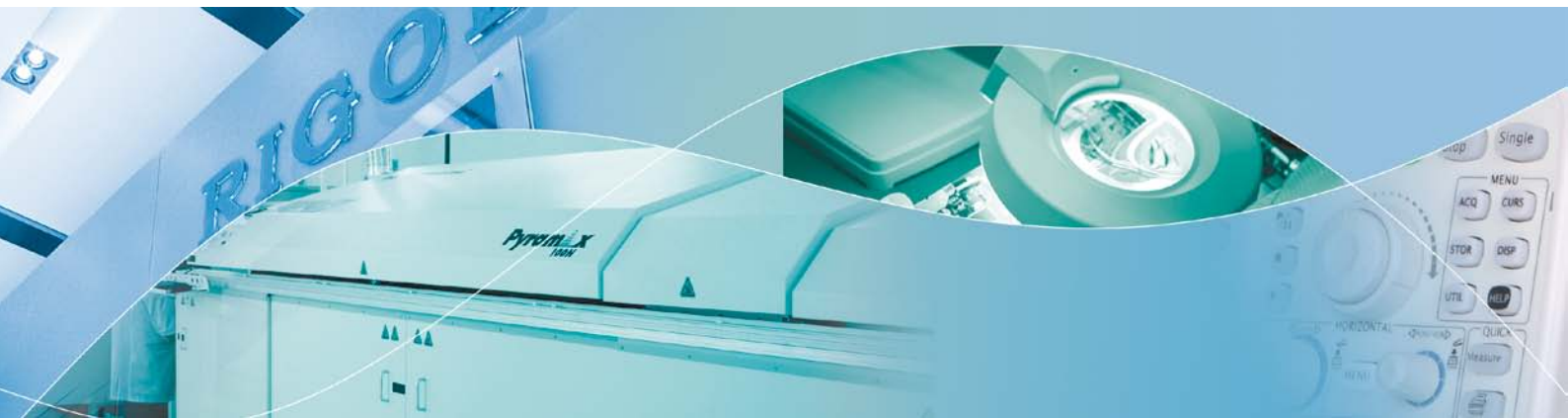
RIGOL's Technical Support Team is dedicated to customers' success and satisfaction. Our professional and enthusiastic support engineers will not only help customers to get the most of RIGOL products but are committed to customers' applications and their customized test needs.

Our repair and calibration services will get you the full value out of your RIGOL equipment throughout its lifetime. With our professional service, you will always measure with the confidence.

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**RIGOL**

Product specifications and descriptions subject to change without notice.

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RIGOL local distributors.